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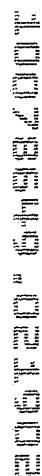
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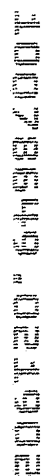
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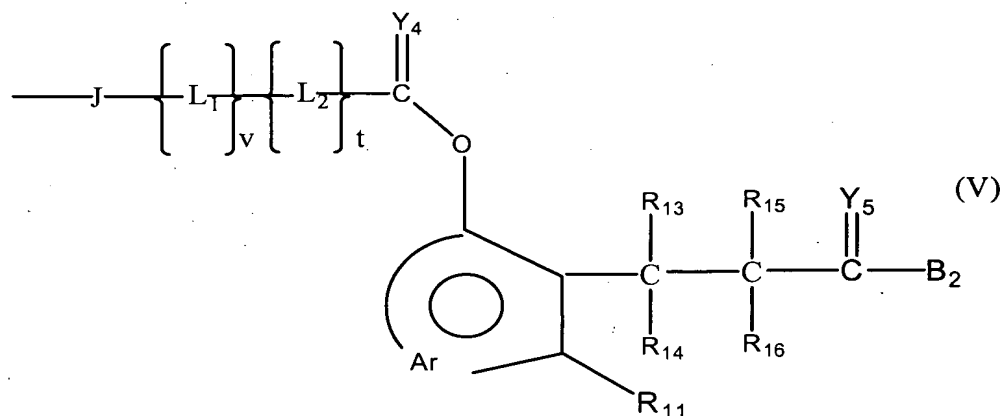
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**100769** 中国人口地理学. 1987年第1期. 1-10页.

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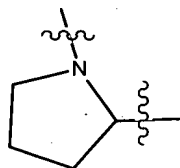
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or a terminal branching group;

wherein (v) and (t) are independently 0 or a positive integer up to about 6;

J is  $\text{NR}_{12}$  or



$\text{L}_1$  and  $\text{L}_2$  are independently selected bifunctional linkers;

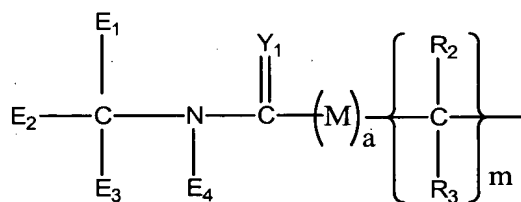
$\text{Y}_{4,7}$  are independently selected from the group consisting of O, S and  $\text{NR}_{14}$ ;

$\text{R}_{11-14}$  are independently selected from the group consisting of hydrogen,  $\text{C}_{1-6}$  alkyls,  $\text{C}_{3-12}$  branched alkyls,  $\text{C}_{3-8}$  cycloalkyls,  $\text{C}_{1-6}$  substituted alkyls,  $\text{C}_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $\text{C}_{1-6}$  heteroalkyls, substituted  $\text{C}_{1-6}$  heteroalkyls,  $\text{C}_{1-6}$  alkoxy, phenoxy and  $\text{C}_{1-6}$  heteroalkoxy;

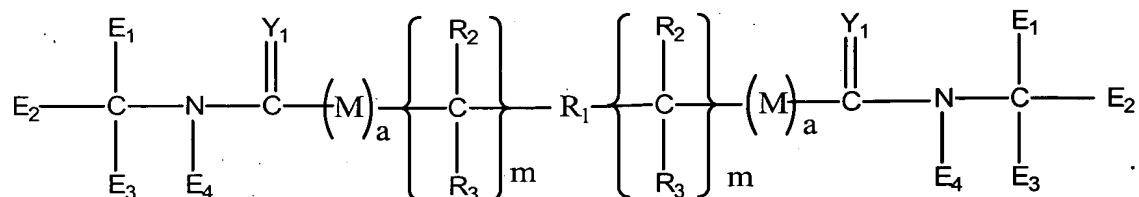
Ar is a moiety which when included in Formula (I) forms a multi-substituted aromatic hydrocarbon or a multi-substituted heterocyclic group;

$\text{B}_1$  and  $\text{B}_2$  are independently selected from the group consisting of leaving groups, OH, residues of hydroxyl-containing moieties or amine-containing moieties.

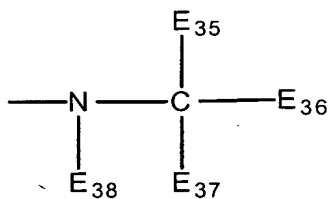
2. The compound of claim 1, wherein  $\text{R}_1$  further comprises a capping group A, selected from the group consisting of hydrogen,  $\text{NH}_2$ , OH,  $\text{CO}_2\text{H}$ ,  $\text{C}_{1-6}$  moieties and



3. A compound of claim 2, comprising the formula:

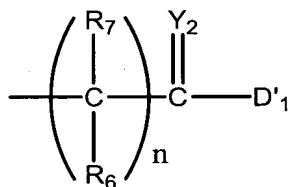


4. The compound of claim 1, wherein said terminal branching group comprises the formula:

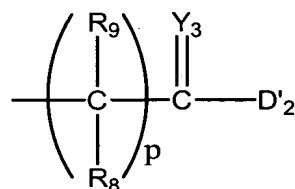


wherein

$\text{E}_{35}$  is



$\text{E}_{36-38}$  are independently H,  $\text{E}_{35}$  or



(n) and (p) are independently 0 or a positive integer;

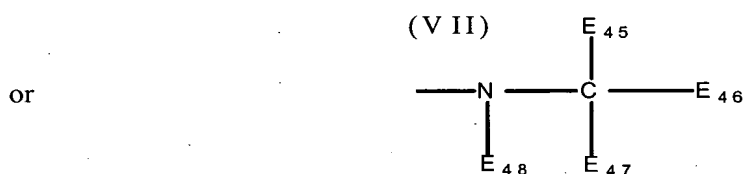
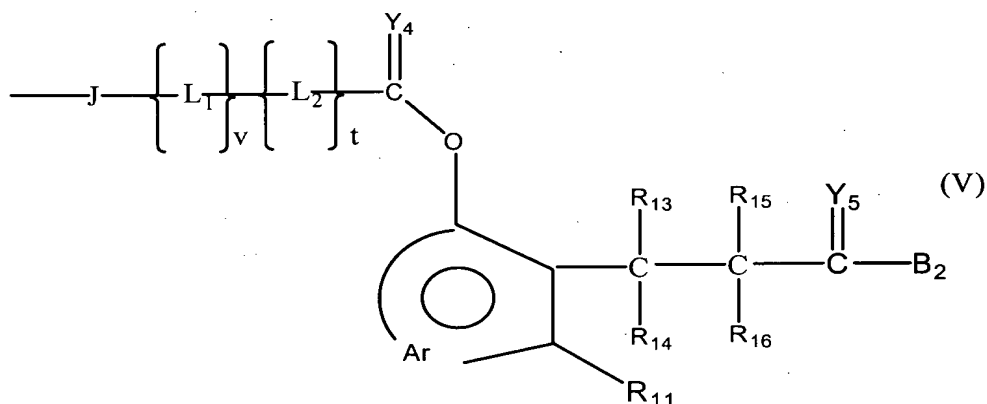
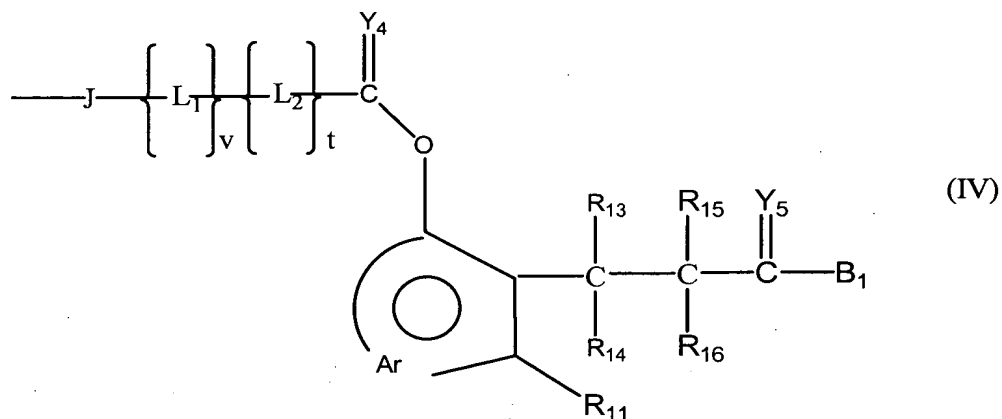
$\text{Y}_{2,3}$  are independently O, S or  $\text{NR}_{10}$ ;

$\text{R}_{6-10}$  are independently selected from the group consisting of hydrogen,

$\text{C}_{1-6}$  alkyls,  $\text{C}_{3-12}$  branched alkyls,  $\text{C}_{3-8}$  cycloalkyls,  $\text{C}_{1-6}$  substituted alkyls,  $\text{C}_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $\text{C}_{1-6}$  heteroalkyls, substituted  $\text{C}_{1-6}$  hetero-

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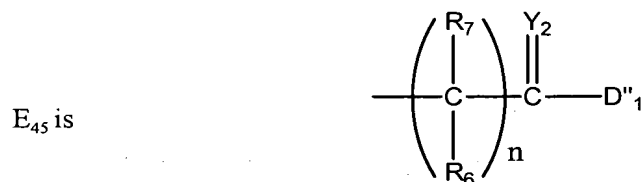
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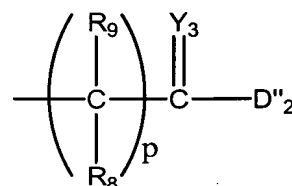
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Ar is a moiety which when included in Formula (I) forms a multi-substituted aromatic hydrocarbon or a multi-substituted heterocyclic group;

B<sub>1</sub> and B<sub>2</sub> are independently selected from the group consisting of leaving groups, OH, residues of hydroxyl-containing moieties or amine-containing moieties;

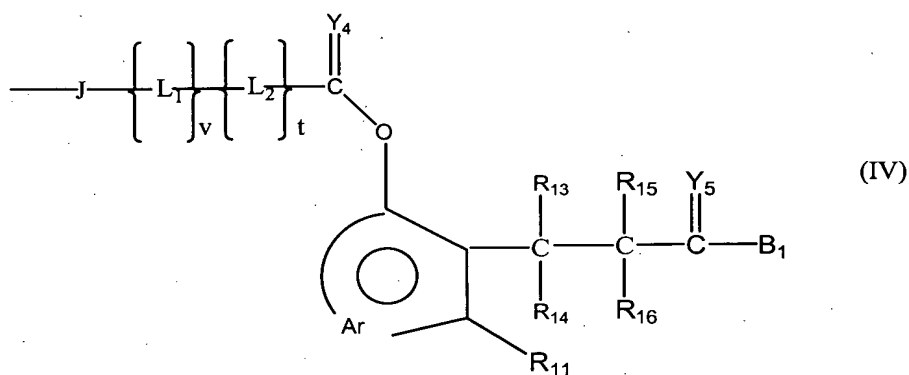


E<sub>46-48</sub> are independently H, E<sub>45</sub> or

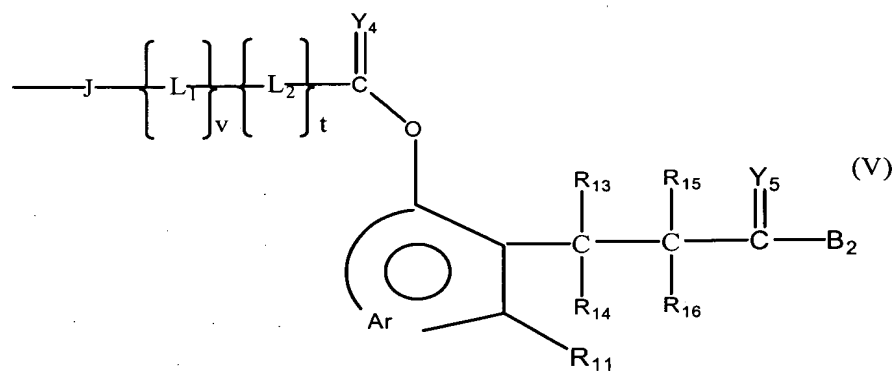


wherein

D''<sub>1</sub> and D''<sub>2</sub> are independently OH,



or



5. The compound of claim 3,  $Y_1$  is O.
6. The compound of claim 1, wherein  $R_1$  comprises a polyalkylene oxide residue.
7. The compound of claim 6, wherein  $R_1$  comprises a polyethylene glycol residue.
8. The compound of claim 3, wherein  $R_1$  comprises a polyethylene glycol residue.

9. The compound of claim 6, wherein  $R_1$  is selected from the group consisting of

$-C(=Y_6)-(CH_2)_f-O-(CH_2CH_2O)_x-A$ ,  
 $-C(=Y_6)-Y_7-(CH_2)_f-O-(CH_2CH_2O)_x-A$ ,  
 $-C(=Y_6)-NR_{23}-(CH_2)_f-O-(CH_2CH_2O)_x-A$ ,  
 $-(CR_{24}R_{25})_e-O-(CH_2)_f-O-(CH_2CH_2O)_x-A$ ,  
 $-NR_{23}-(CH_2)_f-O-(CH_2CH_2O)_x-A$ ,  
 $-C(=Y_6)-(CH_2)_f-O-(CH_2CH_2O)_x-(CH_2)_f-C(=Y_6)-$ ,  
 $-C(=Y_6)-Y_7-(CH_2)_f-O-(CH_2CH_2O)_x-(CH_2)_f-Y_7-C(=Y_6)-$ ,  
 $-C(=Y_6)-NR_{23}-(CH_2)_f-O-(CH_2CH_2O)_x-(CH_2)_f-NR_{23}-C(=Y_6)-$ ,  
 $-(CR_{24}R_{25})_e-O-(CH_2)_f-O-(CH_2CH_2O)_x-(CH_2)_f-O-(CR_{24}R_{25})_e-$ , and  
 $-NR_{23}-(CH_2)_f-O-(CH_2CH_2O)_x-(CH_2)_f-NR_{23}-$

wherein:  $Y_6$  and  $Y_7$  are independently O, S or  $NR_{23}$ ;

$x$  is the degree of polymerization;

$R_{23}$ ,  $R_{24}$  and  $R_{25}$  are independently selected from among H,  $C_{1-6}$  alkyls,  
 $C_{3-12}$  branched alkyls,  $C_{3-8}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-8}$  substituted cycloalkyls,  
 aryls, substituted aryls, aralkyls,  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  
 $C_{1-6}$  alkoxy, phenoxy and  $C_{1-6}$  heteroalkoxy;

$e$  and  $f$  are independently zero, one or two; and

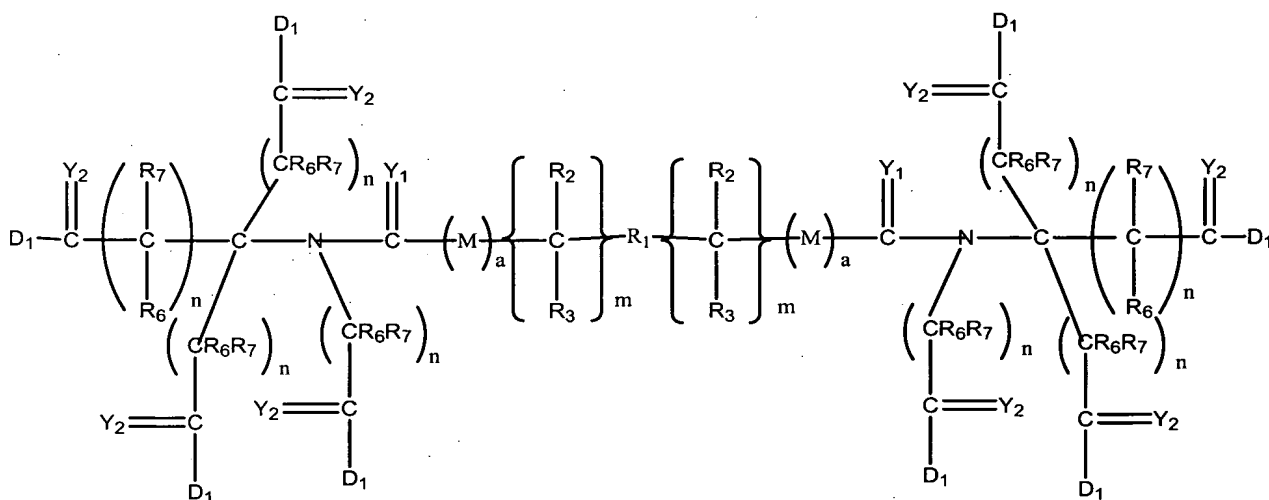
A is a capping group.

10. The compound of claim 9, wherein  $R_1$  comprises  $-O-(CH_2CH_2O)_x$  and  $x$  is a positive integer so that the weight average molecular weight is at least about 20,000.

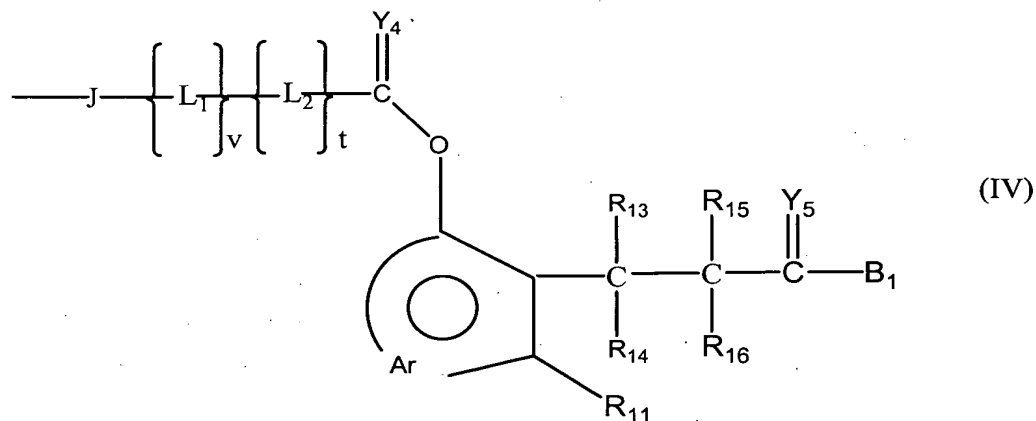
11. The compound of claim 3, wherein  $R_1$  has a weight average molecular weight of from about 20,000 to about 100,000.

12. The compound of claim 3, wherein  $R_1$  has a weight average molecular weight of from about 25,000 to about 60,000.

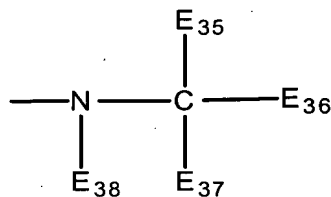
13. A compound of claim 3, comprising the formula



14. The compound of claim 13, wherein  $D_1$  is



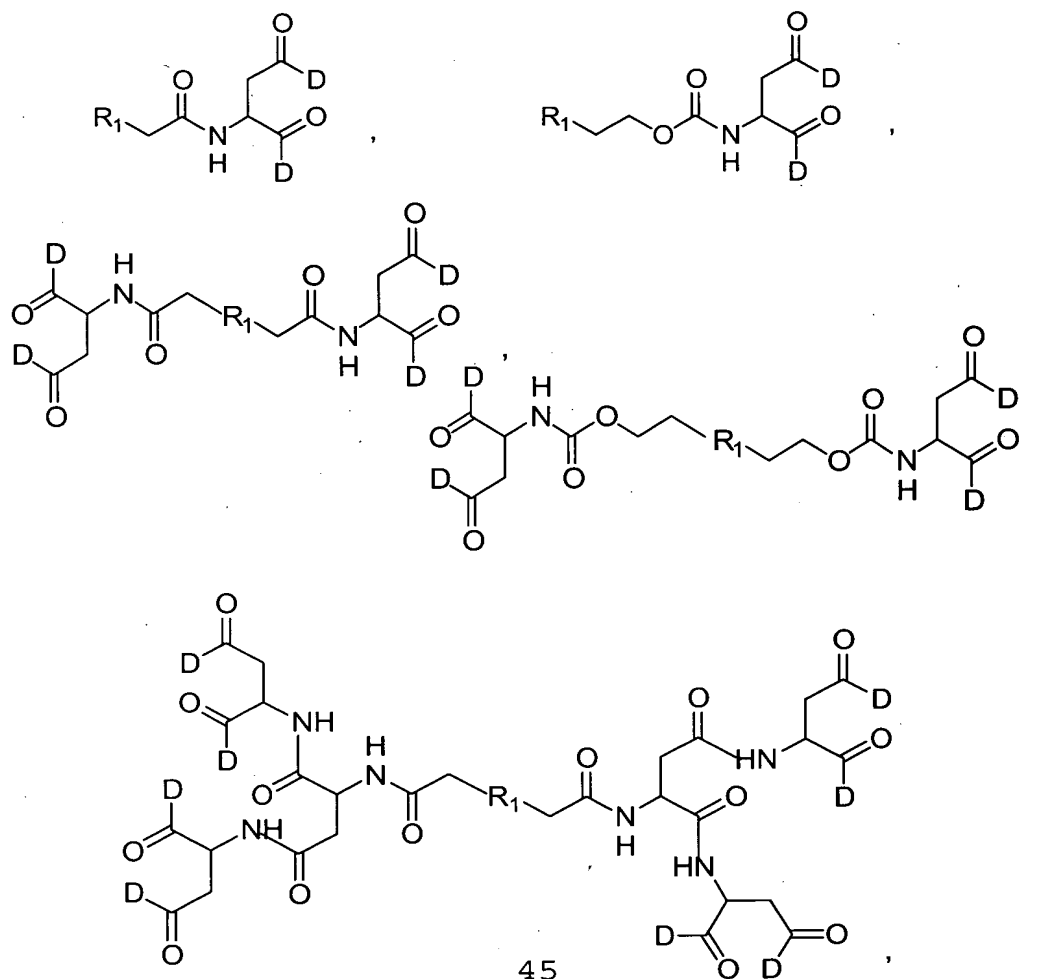
15. The compound of claim 13, wherein D<sub>1</sub> is



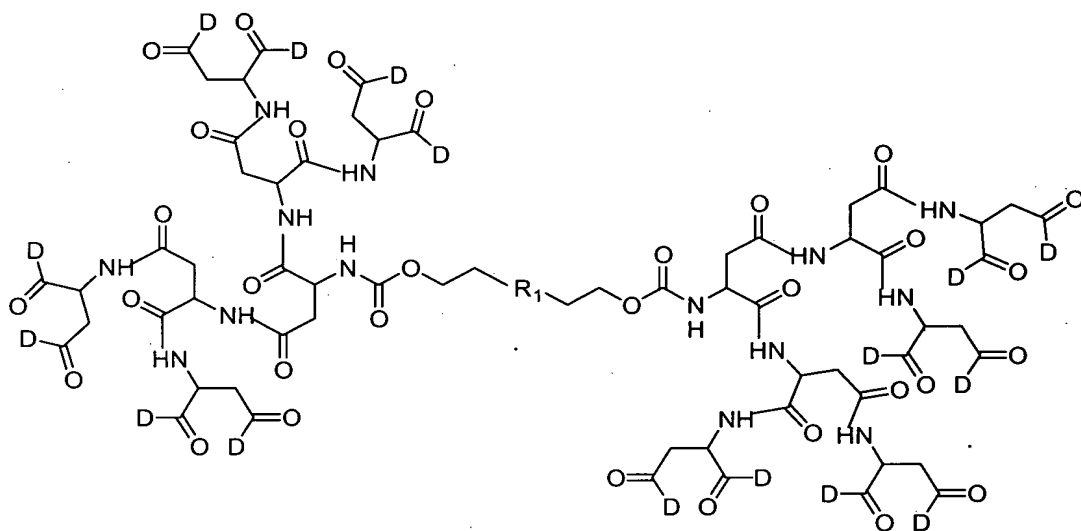
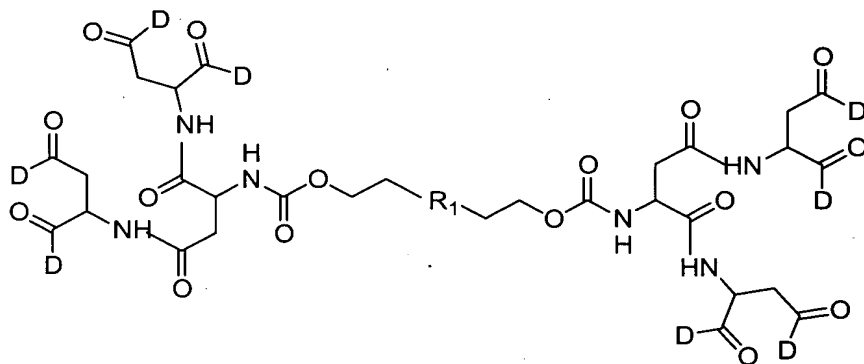
16. The compound of claim 1, wherein L<sub>1</sub> is (CH<sub>2</sub>CH<sub>2</sub>O)<sub>2</sub>.

17. The compound of claim 1, wherein L<sub>2</sub> is selected from the group consisting of -CH<sub>2</sub>-, -CH(CH<sub>3</sub>)-, -CH<sub>2</sub>C(O)NHCH(CH<sub>3</sub>)-, -(CH<sub>2</sub>)<sub>2</sub>-, -CH<sub>2</sub>C(O)NHCH<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-NH-, -(CH<sub>2</sub>)<sub>2</sub>-NH-C(O)(CH<sub>2</sub>)<sub>2</sub>NH- and -CH<sub>2</sub>C(O)NHCH(CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>)-

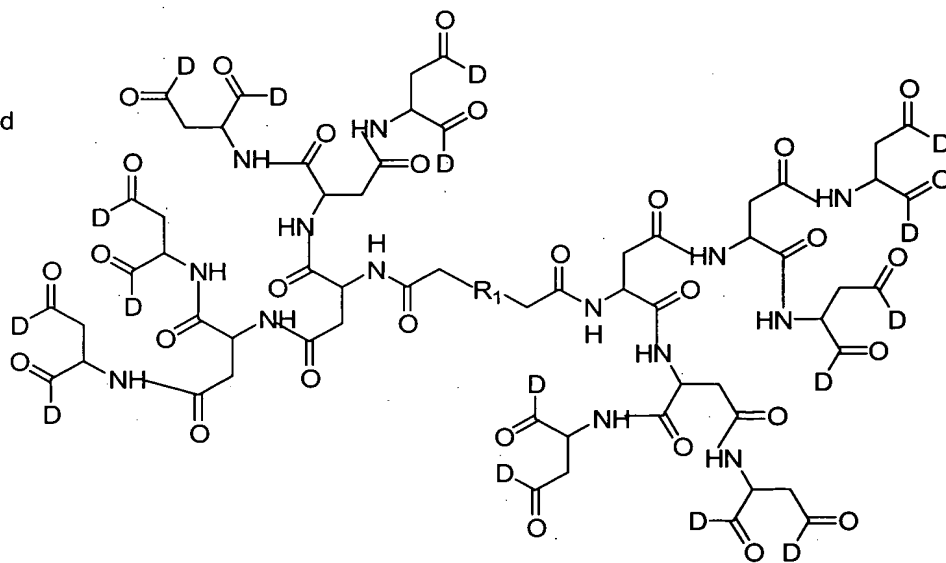
18. A compound of claim 1, selected from the group consisting of:



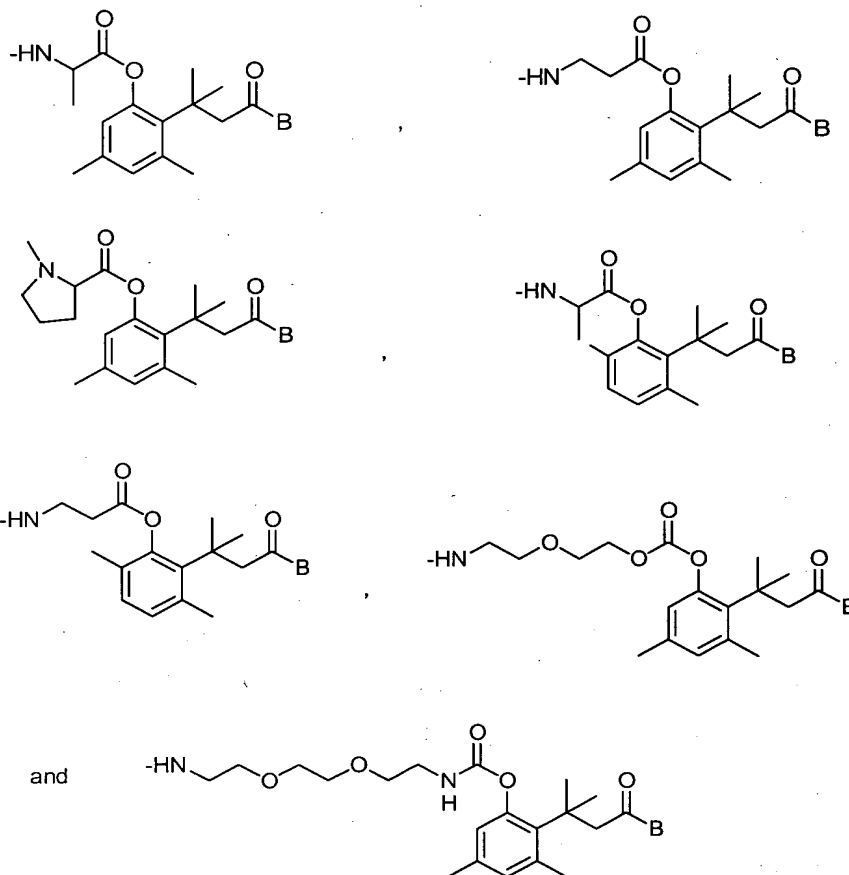




and



wherein  $R_1$  is a PEG residue and D is selected from the group consisting of:



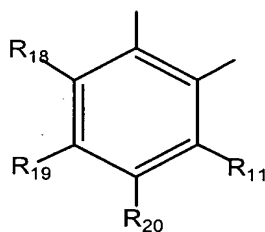
where B is a residue of an amine or a hydroxyl-containing drug.

19. A compound of claim 18, wherein B is a residue of a member of the group consisting of: daunorubicin, doxorubicin; *p*-aminoaniline mustard, melphalan, Ara-C (cytosine arabinoside), leucine-Ara-C, and gemcitabine

20. A method of treatment, comprising administering to a mammal in need of such treatment an effective amount of a compound of claim 1, wherein  $D_1$  is a residue of a biologically active moiety.

21. A method of treatment, comprising administering to a mammal in need of such treatment an effective amount of a compound of claim 18.

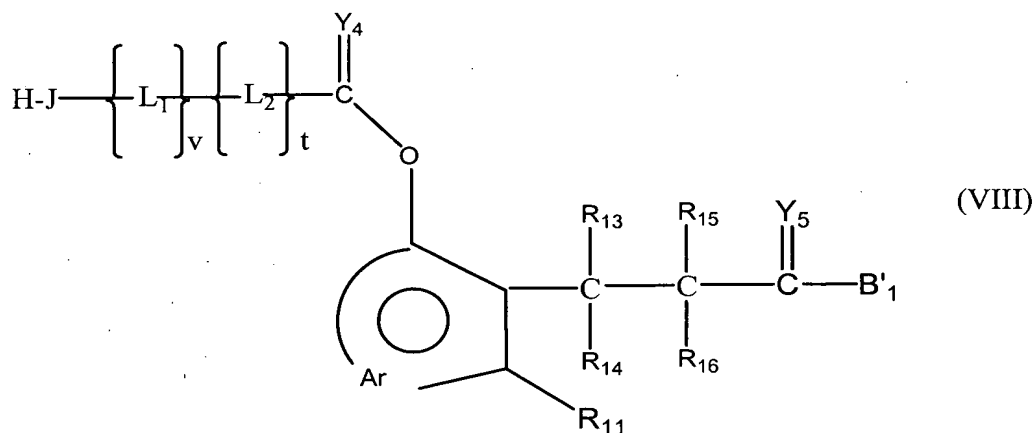
22. The compound of claim 1, wherein Ar comprises the formula:



wherein  $R_{11}$  and  $R_{18-20}$  are individually selected from the group consisting of hydrogen,  $C_{1-6}$  alkyls,  $C_{3-12}$  branched alkyls,  $C_{3-8}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  $C_{1-6}$  alkoxy, phenoxy and  $C_{1-6}$  heteroalkoxy.

23. The compound of claim 22, wherein  $R_{11}$  and  $R_{18-20}$  are each H or  $CH_3$ .

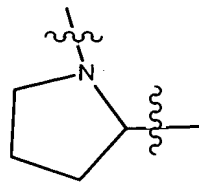
24. A method of preparing a polymer conjugate, comprising:  
reacting a compound of the formula (VIII):



wherein

(v) and (t) are independently 0 or a positive integer up to about 6;

J is  $NR_{12}$  or



$L_1$  and  $L_2$  are independently selected bifunctional linkers;

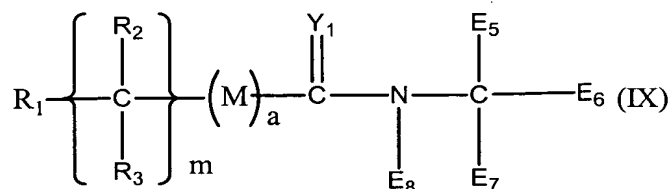
$Y_{4,5}$  are independently selected from the group consisting of O, S and  $NR_{17}$ ;

$R_{11-17}$  are independently selected from the group consisting of hydrogen,  $C_{1-6}$  alkyls,  $C_{3-12}$  branched alkyls,  $C_{3-8}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  $C_{1-6}$  alkoxy, phenoxy and  $C_{1-6}$  heteroalkoxy;

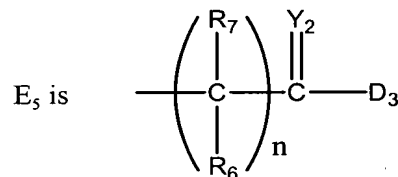
Ar is a moiety which when included in Formula (I) forms a multi-substituted aromatic hydrocarbon or a multi-substituted heterocyclic group; and

$B'_1$  is a residue of a hydroxyl- or an amine-containing moiety;

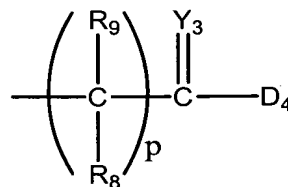
with a compound of the formula (IX):



wherein



$E_{6,8}$  are independently H,  $E_5$  or



$D_3$  and  $D_4$  are independently OH, a leaving group which is capable of reacting with an unprotected amine or hydroxyl or a terminal branching group;

$R_1$  is a polymeric residue;

$Y_1$  is O, S or  $NR_4$ ;

M is O, S or  $NR_5$ ;

(a) is zero or one;

(m) is 0 or a positive integer;

(n) and (p) are independently 0 or a positive integer;

$Y_{2,3}$  are independently O, S or  $NR_{10}$ ; and

$R_{2-10}$  are independently selected from the group consisting of hydrogen,  $C_{1-6}$  alkyls,  $C_{3-12}$  branched alkyls,  $C_{3-8}$  cycloalkyls,  $C_{1-6}$  substituted alkyls,  $C_{3-8}$  substituted cycloalkyls, aryls, substituted aryls, aralkyls,  $C_{1-6}$  heteroalkyls, substituted  $C_{1-6}$  heteroalkyls,  $C_{1-6}$  alkoxy, phenoxy and  $C_{1-6}$  heteroalkoxy;

under conditions sufficient to cause a polymeric conjugate to be formed.

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